IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application: Qiwei He et al.	)	Group Art Unit: 1796
	)	
Serial No. 10/587,374	)	Examiner: Peter D. Mulcahy
	)	
Filed: July 26, 2006	)	Atty. Docket No. N-3057.NWN
	)	

For: LOW APPLICATION TEMPERATURE ELASTIC ATTACHMENT ADHESIVE

BRIEF ON APPEAL

Commissioner for Patents
Alexandria, VA 22313-1450

Sir:

Applicants hereby appeal the decision of the Primary Examiner finally rejecting claims 1-20.

A copy of the claims involved in this appeal is set forth in the *Claims appendix.*

(i) *Real party in interest*

The real party in interest is Henkel AG & Co. KGaA.

(ii) *Related appeals and interferences*

The Board is directed to the appeal relating to copending commonly assigned application Serial Nos. 10/773,547, as listed in the *Related proceedings appendix.*

(iii) *Status of Claims*

Claims 1-20 are pending.

No claims have been canceled.

Claims 1-6 and 11-20 are rejected under 35 U.S.C. § 102 (b) as being anticipated by or, in

the alternative, under 35 U.S.C. § 103 (a) as being obvious over vanDrongelen et al. (US 6,103,814).

Claims 7-10 are rejected under 35 U.S.C. § 103 (a) as being unpatentable over vanDrongelen et al. (US 6,103,814) in view of Boyce et al. (U.S. 4,284,542).

The rejections of claims 1-20 are being appealed.

(iv) *Status of Amendments*

All amendments have been entered.

(v) *Summary of claimed subject matter*

Independent claim 1 is directed to a low application temperature thermoplastic hot melt adhesive. The claimed adhesive has a viscosity at 275°F of less than about 8,000 centipoise, a yield stress of less than about 80 psi and a creep performance for a bond made through strand coating of less than about 15%. Page 2, lines 6-9 of applicants' substitute specification.

(vi) *Grounds of rejection to be reviewed on appeal*

A. WHETHER CLAIMS 1-6 AND 11-20 ARE ANTICIPATED BY, OR IN THE ALTERNATIVE OBVIOUS OVER VANDRONGELEN ET AL. (US 6,103,814).

A-1a. WHETHER CLAIMS 1-6 AND 11-15 and 20 ARE ANTICIPATED BY VANDRONGELEN.

A-1b. WHETHER CLAIMS 17-19 ARE ANTICIPATED BY VANDRONGELEN.

A-2a. WHETHER CLAIMS 1-6 AND 11-20 ARE OBVIOUS OVER VANDRONGELEN.

A-2b. WHETHER CLAIMS 17-19 ARE OBVIOUS OVER VANDRONGELEN.

B WHETHER CLAIMS 7-10 ARE OBVIOUS OVER VANDRONGELEN ET AL. (US 6,103,814) IN VIEW BOYCE ET AL. (US 4,284,542).

(vii) *Argument*

A Claims 1-6 and 11-20 are patentable over vanDrongelen et al. (US 6,103,814).

Claims 1-6 and 11-20 are rejected under 35 U.S.C. § 102 (b) as being anticipated by or, in the alternative, under 35 U.S.C. § 103 (a) as being obvious over vanDrongelen et al (US 6,103,814).

A-1a. Claims 1-6 and 11-20 are not anticipated by vanDrongelen.

The vanDrongelen patent is cited as showing hot melt adhesives containing a thermoplastic elastomer and that can have a viscosity and creep value falling within the scope of the claim. The examiner refers to Table 21 (see col. 45) and to col. 55, lines 21-57 of vanDrongelen as disclosing viscosity and creep performance falling within the scope of the claims. It is the examiner's position that in view of this disclosure of vanDrongelen the claims are anticipated.

Applicants disagree.

The vanDrongelen patent does not disclose a low application temperature hot melt adhesive. As defined in applicants' specification, a low application temperature hot melt adhesive is one that is used/applied at a temperature of between about 200°F and 300°F (see applicants' disclosure at page 3, lines 13-14 (substitute specification)).

While vanDrongelen reports viscosity data for a few of the many samples tested at 140°C (284°F), see reported data in Table 21, of below 8000cps, the same samples tested at 120°C (248°F) are substantially higher (3 or more times higher). Based on the reported data, one skilled in the art would not be able to identify a single sample that would have a viscosity at 275°F

(135°C) of less than 8000 cps as required of applicants' claimed adhesive. Moreover, there is no disclosure that the tested sample may be used/applied at low application temperature (i.e., a temperature of between about 200°F and 300°F). The disclosure at col. 55, lines 21-57, of vanDrongelen discloses method of determining creep performance (measured as elastic retention/percent of original length) for a bond made through spiral coating. The adhesive of vanDrongelen is applied at a temperature of 160°C (320°F) through a nozzle heated to 160°C (320°F). I.e., the adhesive of vanDrongelen is not a low application temperature hot melt adhesive (an adhesive that can be applied at a temperature of between about 200°F and 300°F, see applicants' disclosure (substitute specification) at page 3, lines 13-14).

For a prior art document to anticipate, all elements of the claim must be disclosed within the four corners of the document. The vanDrongelen patent does not disclose any formulation that can be applied at low temperatures (at a temperature of between about 200°F and 300°F) or that has a viscosity at 275°F of less than about 8,000 centipoise, let alone a formulation that also has a yield stress of less that 80 PSI and has a creep performance for a bond made through strand coating of less than about 15%. As such, applicants' claimed adhesive is not anticipated by vanDrongelen.

Claims 1-6, 11-16 and 20 are not anticipated by vanDrongelen.

Reversal of the examiner's Section rejection of claims 1-6, 11-16 and 20 is requested.

A-1b. Claims 17-19 are not anticipated by vanDrongelen.

Claims 17-19 are directed to articles of manufacture that comprise a low application hot melt adhesive. The adhesive is formulated for application at low temperatures and comprises

from about 0.5 to about 55 wt % of a thermoplastic elastomer, from about 30 to about 90 wt % of a tackifying resin, and 0.1 to about 15 wt % of an ionomer resin. The adhesives has a viscosity at 275°F of less than about 8,000 centipoise, has a yield stress of less that 80 PSI and has a creep performance for a bond made through strand coating of less than about 15%.

Again, for a prior art document to anticipate, all elements of the claim must be disclosed within the four corners of the document. The vanDrongelen patent does not disclose any formulation that can be applied at low temperatures (an adhesive that is applied at a temperature of between about 200°F and 300°F) or has a viscosity at 275°F of less than about 8,000 centipoise, and is silent as to the use of an ionomer component, as required in claims 17-19. Indeed, the examiner has acknowledged that the vanDrongelen patent is silent as to the incorporation of an ionomer resin (see Office action, mailed 01/11/2008, page 4, numbered paragraph 6). As such, the claimed adhesive is not anticipated by vanDrongelen.

Claims 17-19 are not anticipated by vanDrongelen.

Reversal of the examiner's Section 102 rejection of claims 17-19 is requested.

A-2a. Claims 1-6, 11-16 and 20 are not obvious over vanDrongelen.

There is no disclosure in the vanDrongelen patent that would motivate the skilled artisan to formulate adhesives having a low viscosity (a viscosity at 275°F of less than about 8,000 centipoise) that can be used (i.e., applied) at low temperatures, let alone expect that such adhesive would have a yield stress of less than about than 80 psi and a creep performance for a bond made through strand coating of less than about 15%. The claimed invention is not obvious over vanDrongelen.

In response to the examiner's comments (see Office action dated November 10, 2008, numbered paragraph 7), applicants disagree that there is clear overlap which renders obvious the claimed invention. The examiner's position that the patent shows the same compositional ingredients and amounts and thus would possess or render obvious the properties of the adhesive claimed by applicants is without merit. The claims require ingredients that can be used to formulate a low application adhesive that will give the required performance properties. There is no disclosure or suggestion that any hot melt can be formulated that could be applied at low temperatures (i.e., a temperature of between about 200°F and 300°F) and that would have a viscosity at 275°F of less than about 8,000 centipoise, let alone exhibit a yield stress of less than about than 80 psi and a creep performance for a bond made through strand coating of less than about 15%.

The examiner's position that the fact that the adhesive of vanDrongelen is reported to have a viscosity of less that 8000cps at 285°F does not mean it will have a viscosity greater than 8000cps at 275°F is without merit, as is the assertion that there is no application temperature claimed. One skilled in the art would recognize that if a hot melt adhesive has a viscosity of e.g., 7,320 at 285°F, that the viscosity would be greater than 8000 at a lower temperature of 275°F. From Table 21 it can be seen that adhesive formulations having viscosities of 7,450; 6,930; 7,320; 9,620 and 6,850 cps at 285°F have a viscosities of 48,400; 25,350; 24,200; 38,750; and 22,000, respectively, at 250°F. Regarding the examiner's assertion that there is no application temperature claimed, the claims recite "low application temperature" which is defined within the subject application as being an adhesive that is applied at a temperature of between about 200°F

and 300°F.

The vanDrongelen patent fails to teach or suggest any adhesive having a viscosity at 275°F of less than about 8,000 centipoise, which makes it suitable for application at low temperatures. As the formulations of vanDrongelen do not even have the required viscosity, it would not be reasonably to presume, as urged by the examiner, that the adhesive of vanDrongelen would possess the characteristics claimed by applicants.

Claims 1-6, 11-16 and 20 are not obvious over vanDrongelen.

Reversal of the examiner's Section 103 rejection of claims1-6, 11-16 and 20 is requested.

A-2b. Claims 17-19 are not obvious over vanDrongelen.

Claims 17-19 are directed to articles of manufacture that comprise a low application hot melt adhesive. The adhesive is formulated for application at low temperatures and comprises from about 0.5 to about 55 wt % of a thermoplastic elastomer, from about 30 to about 90 wt % of a tackifying resin, and 0.1 to about 15 wt % of an ionomer resin. The adhesives has a viscosity at 275°F of less than about 8,000 centipoise, has a yield stress of less that 80 PSI and has a creep performance for a bond made through strand coating of less than about 15%.

Not only does the vanDrongelen patent fail to teach or suggest any adhesive having a viscosity at 275°F of less than about 8,000 centipoise, which makes it suitable for application at low temperatures, but the patent fails to teach or suggest any adhesive at all that comprises an ionomer as required for use in the practice of the inventions set forth in claims 17-19. Again, as noted above, the examiner has acknowledged that the vanDrongelen patent is silent as to the incorporation of an ionomer resin (see Office action, mailed 01/11/2008, page 4, numbered

paragraph 6).

Claims 17-19 are not obvious over vanDrongelen.

Reversal of the examiner's Section 103 rejection of claims 17-19 is requested.

B. Claims 6-10 are not obvious over vanDrongelen et al. (US 6,103,814) in view of Boyce et al. (U.S. 4,284,542).

Claims 7-10 are rejected under 35 U.S.C. § 103 (a) as being unpatentable over vanDrongelen et al (US 6,103,814) in view of Boyce et al. (U.S. 4,284,542).

The examiner acknowledges that the vanDrongelen patent is silent as to the incorporation of an ionomer resin (see Office action, mailed 01/11/2008, page 4, numbered paragraph 6). The examiner applies Boyce as disclosing the incorporation of the claimed ionomer resin into adhesive compositions. The examiner urges that it would have been *prima facie* obvious to incorporate the ionomer resin of Boyce in the adhesive of vanDrongelen. The examiner (see comment under numbered paragraph 11 of the Advisory action, mailed March 24, 2009) argues that:

> The vanDrongelen patent shows each of the compositional ingredients and requisite amounts, but for the ionomer as provided in Boyce. The adhesives of vanDrongelen are presumed to have properties that anticipate and/or render obvious those claimed. The fact that the art is silent as to the claimed properties does not mean that they are not possessed by the adhesive compositions formulated by the same ingredients used in the same amounts. Once again, applicants have failed to show or allege that the art does not possess properties that anticipate and/or render obvious those claimed. To the contrary, it is reasonable to presume that the claimed properties are anticipated and/or obvious from the art given that these are the same compositional components used in the same amounts and ratios. The fact that the art is simply silent as to the claimed property does not mean that the properties do not exist in the adhesive of the prior art.

Applicants disagree. The claimed invention is not obvious over the disclosure of vanDrongelen in view of the Boyce disclosure.

The hot melt adhesive of the claims 7-10 are formulated for application at low temperatures. As noted above, a low application temperature hot melt adhesive is defined within applicants' disclosure as an adhesive that is applied at a temperature of between from about 200°F to about 300°F. The adhesives of the invention comprise from about 0.5 to about 55 wt % of a thermoplastic elastomer, from about 30 to about 90 wt % of a tackifying resin, from 0 to about 40 wt % of a diluent, from 0 to about 25 wt % of a wax and requires inclusion of an ionomer resin additive in amounts of up to about 40 wt %, which ionomer resin lowers viscosity, increases toughness and increases tensile strength. The claimed adhesive has a viscosity at 275°F of less than about 8,000 centipoise, has a yield stress of less that 80 PSI and has a creep performance for a bond made through strand coating of less than about 25%. Applicants have discovered that use of particular additives, and with respect to claims 7-10 an ionomer additive, in a thermoplastic elastomer-based hot melt adhesive lowers viscosity, increases toughness and tensile strength, which attributes make the formulated adhesive particularly well suited when used in elastic attachments applications.

The vanDrongelen patent does not disclose a low application temperature hot melt adhesive. While viscosity data at temperatures of 120°C (248°F), 140°C (284°F), 160°C (320°F), and 180°C (356°F) are reported, there is no disclosure that low temperature use/application is contemplated. At col. 55, lines 21-57, a method of determining creep performance (measured as elastic retention/percent of original length) for a bond made through spiral coating is disclosed.

The adhesive of vanDrongelen is applied at a temperature of 160°C (320°F) through a nozzle heated to 160°C (320°F). I.e., the adhesive of vanDrongelen is not a low application temperature hot melt adhesive (applied at a temperature of between about 200°F and 300°F).

Boyce discloses ionomer-based hot melt adhesives and sealant compositions that contain ammonium phosphate and have improved high temperature viscosity, which viscosity stability is measured at 205°C (401°F). The adhesives are described as having high mechanical strength and dead load creep resistance extending up to 100°C while still allowing pumping at 150°C-200°C (302°F-393°F). The Boyce compositions, which are not low application temperature hot melt adhesives, find use as glass sealants or adhesives for automobile windows. Preferably, the compositions also contain an inorganic filler, such as carbon black. Small quantities of a reinforcing agent may also be used and preferred reinforcing resins are disclosed at col. 6, lines 47-68. Such reinforcing agents are discloses as being used in amounts of up to 30 parts per hundred of the terpolymer ionomer resin. See also Example 7. While viscosity is measured at 205°C (401°F), the viscosity is not reported, only the change in viscosity over time. Boyce fails to suggest any adhesive formulation, or any ingredients that can be added to the formulation of vanDrongelen that would produce a low application temperature hot melt adhesive that has a viscosity at 275°F of less than about 8,000 centipoise, let alone would also have a yield stress of less than about than 80 psi and a creep performance for a bond made through strand coating of less than about 25%. Boyce fails to cure the defects of vanDrongelen and, as such, the combined disclosures would not render obvious applicants' claimed adhesive.

The examiner's arguments that the adhesives of vanDrongelen are presumed to have

properties that anticipate and/or render obvious those claimed is without merit. First, neither vanDrongelen nor Boyce disclose low application temperature applied adhesives. Second, the vanDrongelen adhesive does not include ionomer. Third, the examples set forth in applicants' specification clearly show that addition an ionomer additive can reduce melt viscosity and improve mechanical properties. There is no disclosure in Boyce that would motivate the skilled artisan add an ionomer resin to the adhesive of vanDrongelen in order to formulate a low temperature applied hot melt.

Claims 7-10 are not obvious over vanDrongelen in view of Boyce.

Reversal of the examiner's Section 103 rejection of claims 7-10 is requested.

Respectfully submitted,

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(viii) *Claims appendix*

1. A low application temperature thermoplastic hot melt adhesive having a viscosity at 275°F of less than about 8,000 centipose, a yield stress of less than about than 80 psi and a creep performance for a bond made through strand coating of less than about 15%.

2. The adhesive of claim 1 which has a creep performance for a bond made through spiral coating of less than about 25%.

3. The adhesive of claim 1 comprising an additive in an amount effective to lower viscosity, increase toughness, and increase tensile strength.

4. The adhesive of claim 3 which has a creep performance for a bond made through spiral coating of less than about 25%.

5. The adhesive of claim 2 which comprises from about 0.5 to about 55 wt % of a thermoplastic elastomer, from about 30 to about 90 wt % of a tackifying resin, from 0 to about 40 wt % of a diluent and from 0 to about 25 wt % of a wax.

6. The adhesive of claim 4 which comprises from about 0.5 to about 55 wt % of a thermoplastic elastomer, from about 30 to about 90 wt % of a tackifying resin, from 0 to about 40 wt % of a

diluent, from 0 to about 25 wt % of a wax and up to about 40 wt % of said additive.

7. The adhesive of claim 6 wherein said additive is an ionomer resin.

8. The adhesive of claim 7 comprising from about 0.1 to about 40 wt % of said ionomer resin.

9. The adhesive of claim 8 comprising from about 0.1 to about 15 wt % of said ionomer resin.

10. The adhesive of claim 9 wherein the thermoplastic elastomer is styrene-isoprene-styrene, styrene-butadiene-styrene, styrene-b-ethylene/butylene-b-styrene or a mixture thereof.

11. An article of manufacture comprising the adhesive of claim 1.

12. The article of claim 11 which is a disposable absorbent article.

13. The article of claim 12 which is a disposable elastic article.

14. The article of claim 13 which is a diaper.

15. The article of claim 11 wherein the article of manufacture further comprises an elastomeric fiber selected from the group consisting of natural rubber, synthetic rubber, spandex, and melt-

spun elastomers.

16. The article of claim 15 wherein the adhesive comprises from about 0.5 to about 55 wt % of a thermoplastic elastomer, from about 30 to about 90 wt % of a tackifying resin, from 0 to about 40 wt % of a diluent, from 0 to about 25 wt % of a wax and up to about 40 wt % of an additive.

17. The article of claim 16 wherein the adhesive comprises from about 0.1 to about 15 wt % of an ionomer resin.

18. The article of claim 17 wherein the adhesive has a creep performance for a bond made through spiral coating of less than about 25%.

19. The article of claim 18 which is a diaper.

20. The adhesive of claim 1 which is applied at a temperature of from about 270°F to about 285°F.

(ix) *Evidence appendix*

NONE

(x) *Related proceedings appendix*

A. Serial No. 10/773,547 (Attorney Docket No. 3021.NWN), filed February 6, 2004 in the names of Qiwei He and Michael G. Harwell. Assigned to Henkel AG & Co. KGaA.